RAA-5

RAA-5: Excavation/Offsite Disposal

ASSUMPTIONS:

i. Discount rate for net present worth calculation of 7% per recommendation of EPA document 540-R-00-002, A Guide to Developing and Documenting Cost Estimates During the Feasibility Study.

ii. Cost estimating sources:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local vendors, RI costs for Pownal Tannery, and ongoing projects

iii. Abbreviations: CY = cubic yards; CF = cubic feet; SY = square yard; SF = square feet; LF = linear feet; LS = lump sum; EA = each; MWK = man weeks; MSF = thousand square feet; MO = month; WK = week; CYL = cylinder.

iv. Future use of site for recreational purposes. A separate investigation and cost estimate will need to be prepared for future site development.

v. For costing purposes, assumed that wetlands will be recreated at a 1:1 ratio.

vi. A 1.5 conversion factor was used to convert from CY to TON for sediment/sludge cost calculations.

vii. RI determination of waste quantities adequate for implementation of Alternative 5. No additional sampling required to further delineate extent of waste.

CAPITAL COST ITEMS:

Estimated Time to Complete Alternative:

- Mobilization/Demobilization:	4 wks
- Site Work	5 wks
- Excavation	20 wks
- Wetlands	3 wks
- Site Restoration	2 wks
	8.5 Months

Note: Total project duration does not include seasonal impacts or delays.

1. Mobilization/Demobilization:

   Site construction activities will require office trailers and field office supplies, storage trailers, decontamination trailers, sanitary facilities, utilities (phone and electrical, including connect/disconnect fees and monthly charges), and site lighting. Assumed installation of electrical poles will be necessary to bring power to the lagoon area (1 pole/150 LF). During construction activities, security will be provided 24 hrs/day at 7 days/wk. An allowance for pre-/post- construction submittals and implementation plans is included based on hourly rates for engineering and office support. See hourly breakdown included with applicable Common Cost Worksheets.

2. Site Work:

   General Equipment: Includes construction support equipment such as site vehicles, dumpsters, and water coolers for the site office trailers. A portable generator is included to support equipment located away from electrical receptacles where using an extension cord would be impractical.

   Continuous Air Monitoring: Assumed 1 laborer at $55/hr will conduct continuous monitoring during 25% of site preparation and excavation. See applicable Common Cost Sub-Element Worksheet for breakdown of monthly expense.

   Clearing/Grubbing: Will need to clear and grub site to facilitate movement of construction equipment. See applicable RAA-5 Capital Cost Sub-Element Worksheet for additional assumptions.

   Well Abandonment/Replacement: Assumed 7 wells in the lagoon area will need to be abandoned/replaced for cap construction and excavation of perimeter berm between Hoosic River and Lagoons 1 and 5. Cost estimate based on experience.

   Surveying: Assumed 2-man crew with GPS at $135/hr onsite for 1 week during general site preparation and also for 21 weeks during excavation and capping activities at 3 days/week. The unit cost estimate was based on information from an ongoing project. The Subcontractor's cost includes hours for 1 supervisor at $50/hr and has an additional mark up to include Contractor's O&P.

   Erosion-Dust Control: Assumed use of a water truck for dust suppression, the installation of silt fencing with hay bales along the access road bordering the Hoosic River (approximately 1,800 LF), and an allowance for construction of one sedimentation trap (50'x 25'x 6'). Exact location, size and grading requirements to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for sedimentation basin material and quantity assumptions made for costing purposes.

   Access Roads-Perimeter: A temporary perimeter road around landfill cap will need to be installed to facilitate excavation/consolidation/capping activities (using 2,200 LF of road). See applicable Common Cost Sub-Element Worksheet for breakdown of unit

cost/100 LF. Road cross-section consists of a layer of geotextile, and 0.5 feet of crushed stone.

Access Roads-Lagoons: Road access, through Lagoons 1, 4 and 5, is needed to facilitate excavation of contaminated material (using 500 LF). Road cross-section consists of 3' of subgrade fill, a layer of geotextile, and 0.5 feet of crushed stone..

Perimeter Construction/Security Fence: Assumed the removal of existing fence and the installation of a 7-foot high fence around the entire perimeter of the Lagoon area. See applicable RAA-5 Capital Cost Sub-Element Worksheet for additional assumptions.

Backfill Lagoon 2: Lagoon 2 will be backfilled to site grade elevation of 510' to create a staging area for site trailers, decontamination facilities and structures. The final two feet of backfill will be 1.5" crushed gravel. See applicable Common Cost Sub-Element Worksheet for additional assumptions.

Decontamination Structure – Heavy Equipment: Two, 8" thick, 25'x 65', concrete pads will be constructed in the staging area to remove sediment from equipment. Pad construction includes a 6" gravel base, a concrete curb and sump with 12" corrugated pipe around perimeter. Exact locations and size to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for assumed quantities and material unit costs.

Decontamination Structure – Personnel: Two, 4" thick, 6' x 6', concrete pads will be constructed in the staging area. Pad construction includes a 4" gravel base with a concrete curb around the perimeter. Exact locations and size to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for assumed quantities and material unit costs.

Dewater Standing Water in Lagoons: Standing water volume estimate of approximately 2,841,000 gal in Lagoons 1, 2, 4 and 5. Requires the use of one 300 GPM pump operating 24 hrs/day for 1 week to remove initial volume. Assumes no immediate ground water recharge. During construction, figure standing water will need to be removed approximately once per month to account for slow ground water recharge and precipitation accumulation. Dewatering of standing water assumed to be above the water table. See applicable Common Cost Sub-Element Worksheet for quantities and unit costs.

Collection & Treatment of Standing Water in Lagoons: Will treat standing water from lagoons using eight Carbon Adsorption units. Each unit consists of two vessels containing 1,000 lbs of carbon/vessel; 2,000 lbs of carbon assumed to treat 100,000 gallons. Fractionation tanks (20,000gal/tank) will be needed to store untreated water. Discharge of treated water will occur onsite through two infiltration galleries assumed to be 20'x 5'x 5' and consisting of geotextile and riprap, exact location and size to be determined during design. Analytical testing will be conducted prior to initial discharge

to ensure proper treatment. See applicable Common Cost Sub-Element Worksheet for quantities and unit costs.

Continuous Cleanup: Cleanup of site during construction activities – 1 laborer. Means unit price including localization factor and markups for overhead and profit.

Site Restoration: Estimate from previous project. Costs to remove concrete structures, repair access roads, and clean up debris.

3. Excavation of Waste Material, Backfill & Wetland Mitigation:

Excavation: Estimate includes excavating approximately 31,100 CY of saturated sludge and 42,500 CY of unsaturated sludge from Lagoons (Table 2.7-1), loading the material onto trucks and transporting the material to a dewatering pad (if saturated) or directly to the disposal facility (if unsaturated). Cover soil from Lagoon 1 will be stockpiled for future use or disposal. Reuse of material not included in cost estimate. Assuming excavation rate of 60 CY/hr using two excavators. Quantity of removed material padded by 20%. Other costs include truck bed liners (2 liners/day) and 20 SY bed covers (1 cover/day). Excavation assumed to be conducted without dewatering below the water table. 30% of operation assumed to occur under Level B conditions.

Odor Suppression: Application of foam odor suppressant during excavation of contaminated material. Costs for labor include 1 laborer at $65/hr. Material costs include shipping.

Hauling to Disposal Facility/Disposal Charges: For costing purposes, disposal facility located near Montpelier, Vermont, a distance of 127 miles from Pownal. Assumed a travel time of 4 hrs one way without heavy traffic.

Confirmatory Soil Sampling: Needed to verify/confirm that desired concentration levels have been achieved through excavation. Analysis cost includes testing for Pest/PCBs, VOCs, SVOCs, Metals/CN and Dioxins.

Technician – Soil Sampling: Labor required to collect samples during excavation - 1 technician at $55/hr. Includes contractor mark up for overhead and profit.

Sludge Dewatering Structures: Construction costs for a 30’ x 40’ dewatering structure to store saturated, contaminated, material before treatment. Components for construction determined from EPA document 625/6-89/022; S/S of CERCLA and RCRA Wastes: Physical Tests, Chemical Testing Procedures, Technology Screening and Field Activities, Section 7.1.3. - Untreated Waste Storage. Exact number and location of structures to be determined in design phase.

Level B Equipment/Operation/Shipping Allowance: Assuming a crew of 15 will need equipment and supplies for the duration of the excavation and capping of the contaminated sludge.

Decontamination of Heavy Equipment: Includes decontamination of 5 pieces of equipment, once/day during initial site work and excavation of contaminated material. Means unit price including localization factor and markups for overhead and profit.

Operation of Trash Pump: Cost to operate a trash pump for decontamination over period of initial site work, excavation and capping. See Common Cost Sub-Element Worksheet for decontamination of heavy equipment.

Backfill Excavated Material: Assuming all of the material excavated will be backfilled with clean material from a local borrow source. Means unit price includes in-place, soil density tests, borrow material, spreading and compacting with roller.

Wetland Mitigation: Assuming 1:1 replacement of 2.4 acres of wetlands with locations of recreated wetland areas to be determined at the design stage.

Seeding/Mulch/Fertilizer: Application over cap area of 4.0 acres. Means unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Institutional Controls/Land Use Restriction: See hourly breakdown and rates included with applicable Common Cost Worksheets.

Alternative 5
OFFSITE DISPOSAL

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 5 consists of excavating all of the contaminated waste identified during the RI and disposing the waste at an offsite landfill. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur every 5 yrs for a period of 30 years.

CAPITAL COSTS:

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Mobilization / Demobilization					
Construction Equipment	2	LS	$1,765.48	$3,531	Excavators, loaders, etc.
Submittals/Implementation Plans	1	LS	$100,985.69	$100,986	
Temporary Facilities & Utilities	1	LS	$70,649.13	$70,649	
Field Office Supplies	1	LS	$14,519.33	$14,519	
Post-Construction Submittals	1	LS	$29,481.95	$29,482	Post-construction report
SUBTOTAL				$219,167	
Site Work					
General Equipment	1	LS	$43,676.16	$43,676	
Continuous Air Monitoring	8.5	MO	$5,120.17	$43,521	
Clearing/Grubbing	1	LS	$20,474.62	$20,475	
Well Abandonment/Replacement	7	EA	$5,775.00	$40,425	
Surveying	63	DAY	$1,709.40	$107,692	2-man crew
Erosion/Dust Control Measures	1	LS	$30,551.33	$30,551	
Access Roads - Perimeter	22	100 LF	$1,657.30	$36,461	
Access Roads - Lagoons	9	100 LF	$5,075.78	$44,413	
Backfill Lagoon 2	1	LS	$506,827.00	$506,827	
Decon. Structure - Heavy Equipment	2	LS	$29,360.54	$58,721	
Decon. Structure - Personnel	2	EA	$311.13	$622	
Dewater Standing Water in Lagoons	1.5	WK	$9,940.27	$14,910	
Collect and Treat Standing Water	3	WK	$123,528.43	$370,585	
Decon. Frac Tanks	20	EA	$1,000.00	$20,000	
Continuous Cleanup	27	MWK	$819.22	$22,119	Means including O&P and localization factor
Site Restoration	1	LS	$5,000.00	$5,000	
SUBTOTAL				$1,366,000	
Excavation of Waste Material, Backfill and Wetland Mitigation					
Excavation	1	LS	$563,695.87	$563,696	
Odor Suppression	1	LS	$80,145.45	$80,145	
Hauling to facility and disposal	1	LS	$11,799,364.50	$11,799,365	
Confirmatory soil sampling	70	EA	$1,100.00	$77,000	
Technician - soil sampling	1	LS	$50,820.00	$50,820	
Sludge Dewatering Structures	8	LS	$3,212.65	$25,701	
Collection & Treatment of Runoff from Dewatering Structures	1	LS	$136,209.76	$136,210	
Level B Equipment	15	PER	$5,600.30	$84,005	
Level B Operation	2	MO	$13,349.08	$22,226	
Level B Shipping Allowance	1	LS	$5,000.00	$5,000	
Decontamination of Heavy Equipment	625	EA	$220.44	$137,772	Means including O&P and localization factor
Operation of Trash Pump	125	DAY	$156.91	$19,614	
Backfill Excavated Material	1	LS	$535,202.29	$535,202	
Lagoon Area Restoration/Stabilization	2.4	ACRE	$46,200.00	$110,880	Including O&P
Seeding/Mulching/Fertilizer	25,168	SY	$1.37	$34,518	
SUBTOTAL				$13,682,155	
SUBTOTAL				$15,267,321	
Contingency (10% scope + 15% bid)	25%			$3,816,830	
SUBTOTAL				$19,084,152	
Project Management	5%			$954,208	
Remedial Design	8%			$1,526,732	
Construction Management	6%			$1,145,049	
Institutional Controls	-			$31,883	Land use restrictions
TOTAL CAPITAL COST:				$22,742,023	

ANNUAL O&M COSTS (Year 1):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Inc 2 QA/QC Samples

Alternative 5
OFFSITE DISPOSAL

COST ESTIMATE SUMMARY

Site: Powinal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 5 consists of excavating all of the contaminated waste identifited during the RI and disposing the waste at an offsite landfill. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur every 5 yrs for a period of 30 years.

	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	1 QA/QC
	SUBTOTAL				$279,652	
Professional/Technical Support						
	Progress Reports			15%	$41,948	
	O&M Oversite			5%	$13,983	
SUBTOTAL					$335,582	
Contingency				10%	$33,558	
	TOTAL ANNUAL O&M COST (Year 1)				$369,140	

ANNUAL O&M COSTS (Years 2-3):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
	Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Semiannually; inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	1 QA/QC
	SUBTOTAL				$154,108	
Professional/Technical Support						
	Progress Reports			15%	$23,116	
	O&M Oversite			5%	$7,705	
SUBTOTAL					$184,930	
Contingency				10%	$18,493	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 2-3)				$203,422	

ANNUAL O&M COSTS (Years 4-6):

	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring						
	Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
	Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
	Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- Annually; inc 2 QA/QC Samples
	Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
	Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
	Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	1 QA/QC
	SUBTOTAL				$91,336	
Professional/Technical Support						
	Progress Reports			15%	$13,700	
	O&M Oversite			5%	$4,567	
SUBTOTAL					$109,603	
Contingency				25%	$27,401	
SUBTOTAL						
	TOTAL ANNUAL O&M COST (Years 4-6)				$137,004	

PERIODIC COSTS:

DESCRIPTION	YR	QTY	UNIT	UNIT COST	TOTAL	NOTES
Five Year Report	5-30	1	EA	$12,000.00	$12,000.00	
					$12,000.00	

Alternative 5
OFFSITE DISPOSAL

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 5 consists of excavating all of the contaminated waste identifited during the RI and disposing the waste at an offsite landfill. Capital costs occur in Year 0. Annual costs occur in Years 1-6. Periodic costs occur every 5 yrs for a period of 30 years.

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$22,742,023	$22,742,023	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1	$369,140	$369,140	-	-	
Annual O&M Cost	2-3	$406,845	$203,422	-	-	
Annual O&M Cost	4-6	$411,012	$137,004	-	-	
Periodic Cost	5	$12,000	$12,000	-	-	
Periodic Cost	10	$12,000	$12,000	-	-	
Periodic Cost	15	$12,000	$12,000	-	-	Remedial Action Report
Periodic Cost	20	$12,000	$12,000	-	-	
Periodic Cost	25	$12,000	$12,000	-	-	
Periodic Cost	30	$12,000	$12,000	-	-	
TOTAL PRESENT VALUE OF ALTERNATIVE					$23,750,084	

Alternative 5

IN SITU RCRA/CERCLA FINAL COVER

PRESENT VALUE ANALYSIS

Site:	Pownal Tannery Site	**Description:**	Alternative 5 consists of excavation and offsite disposal of contaminated waste. Capital costs occur in Year 0 . Annual costs occur in Years 1-6. Periodic costs occur every 5 yrs for 30 yrs.
Location:	Pownal, Vt		
Phase:	Feasibility Study		
Base Year:	2001		
Date:	Apr-01		

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$22,946,823	$0		$22,946,823	1.000	$22,946,823
1		$369,140		$369,140	0.935	$345,146
2		$203,422		$203,422	0.873	$177,588
3		$203,422		$203,422	0.816	$165,993
4		$137,004		$137,004	0.763	$104,534
5		$137,004	$18,884	$155,888	0.713	$111,148
6		$137,004		$137,004	0.666	$91,245
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10			$18,884	$18,884	0.508	$9,593
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15			$18,884	$18,884	0.362	$6,836
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20			$18,884	$18,884	0.258	$4,872
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25			$18,884	$18,884	0.184	$3,475
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30			$18,884	$18,884	0.131	$2,474

TOTAL PRESENT VALUE OF ALTERNATIVE $23,969,726

Alternative 5
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Dozer	1	EA	-	$274	-	$274	$274.00
Site Trucks	2	EA	-	$274	-	$274	$548.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$1,918.00
Area Cost Factor						*69%*	$1,323.42
Subcontractor Overhead						*5%*	$66.17
SUBTOTAL							$1,389.59
Subcontractor Profit						*10%*	$138.96
SUBTOTAL							$1,528.55
Contractor Overhead						*5%*	$76.43
SUBTOTAL							$1,604.98
Contractor Profit						*10%*	$160.50
TOTAL UNIT COST							$1,765.48

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 5
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Assuming onsite construction time of approximately 34 weeks at 4 weeks/month.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	17	MO	-	-	-	$150	$2,550
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	26	MO	-	-	-	$75	$1,913
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	17	MO	-	-	-	$540	$9,180
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	0	EA	$0	$0	$2,000	$2,000	$0
Utilities (phone and electric)	9	MO	$0	$0	$500	$500	$4,250
SUBTOTAL - Local							$39,617

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Decontamination Trailer	9	MO	$0	$0	$2,275	$2,275	$19,338

Area Cost Factor	69%	$13,342.88
SUBTOTAL (Local and Means)		$52,959
Subcontractor Overhead	5%	$2,647.97
SUBTOTAL		$55,607.34
Subcontractor Profit	10%	$5,560.73
SUBTOTAL		$61,168.08
Contractor Overhead	5%	$3,058
SUBTOTAL		$64,226
Contractor Profit	10%	$6,422.65
TOTAL UNIT COST		$70,649

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						*5%*	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						*10%*	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						*5%*	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						*10%*	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 5
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Assuming total time onsite of approx 8.5 months: 4 wks mob/demob; 5 wks site prep; 20 wks excavation/backfill; 8 wks wetlands restoration (5 wks concurrent with other tasks); 2 wks site restoration.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4.0	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2.0	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	17.0	MO	-	-	-	$30.00	$510.00
Install/Remove Water Coolers	2.0	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	17.0	MO	-	-	-	$125.00	$2,125.00
SUBTOTAL							$3,366.20

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
SUV Rental	8.50	MO	$0.00	$0.00	$720.00	$720.00	$6,120.00
Pickup Truck Rental	8.50	MO	$0.00	$0.00	$720.00	$720.00	$6,120.00
Generator 250KW	8.50	MO	$0.00	$3,000.00	$0.00	$3,000.00	$25,500.00
SUBTOTAL							$37,740.00
Area Cost Factor						69%	$26,040.60
SUBTOTAL (Local & Means)							$29,407
Subcontractor Overhead						5%	$1,470
SUBTOTAL							$30,877.14
Subcontractor Profit						10%	$3,087.71
SUBTOTAL							$33,964.85

DESCRIPTION (Subcontractor Costs)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Weather Station	9	MO	$0.00	$0.00	$360.00	$360.00	$3,150.00
Camera	35	WK	$0.00	$0.00	$5.00	$5.00	$175.00
Tool Box	9	MO	$0.00	$0.00	$60.00	$60.00	$525.00
							$3,850.00
SUBTOTAL (Local, Means & Sub)							$37,814.85
Contractor Overhead						5%	$1,890.74
SUBTOTAL							$39,705.60
Contractor Profit						10%	$3,970.56
TOTAL UNIT COSTS							$43,676

Source of Cost Data:
Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		For Level B - 42% Labor and 60% Equipment; not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						*5%*	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						*10%*	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						*5%*	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						*10%*	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub Lagoons 1,2,3, 5 and the southeast corner of Lagoon 4 to facilitate excavation, consolidation and hauling.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						*69%*	$15,348.01
Subcontractor Overhead						*5%*	$767
SUBTOTAL							$16,115
Subcontractor Profit						*10%*	$1,612
SUBTOTAL							$17,727
Contractor Overhead						*5%*	$886.35
SUBTOTAL							$18,613
Contractor Profit						*10%*	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation - approx. 20 weeks at 5 days/wk and 1 pass/day Silt fencing with hay bales installed along access road bordering river. Trench excavation volume for silt fence taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	125	PASS	$0.00	$0.00	$0.00	$166.89	$20,861.25
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	0	LS	$0.00	$0.00	$0.00	$965.12	$0.00
SUBTOTAL - Means							$32,738
Area Cost Factor						*69%*	$22,589
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	6	MO	$0.00	$0.00	$0.00	$50.00	$312.50
SUBTOTAL (Local and means)							$22,902
Subcontractor Overhead						*5%*	$1,145
SUBTOTAL							$24,047
Subcontractor Profit						*10%*	$2,405
SUBTOTAL							$26,451
Contractor Overhead						*5%*	$1,322.57
SUBTOTAL							$27,774
Contractor Profit						*10%*	$2,777
TOTAL UNIT COST							$30,551.33

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:

Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL	$965.12

Source of Cost Data:

Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 1 foot of 4" to 6" ROC.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61
Area Cost Factor						*69%*	$2,386
SUBTOTAL (Local and Means)							$3,493
Subcontractor Overhead						*5%*	$174.66
SUBTOTAL							$3,667.82
Subcontractor Profit						*10%*	$366.78
SUBTOTAL							$4,034.60
DESCRIPTION (Subcontractor)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$4,394.62
Contractor Overhead						*5%*	$219.73
SUBTOTAL							$4,614.35
Contractor Profit						*10%*	$461.43
TOTAL UNIT COST/100 LF							$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						69%	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						5%	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						10%	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						5%	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						10%	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						69%	$48
SUBTOTAL							$118
Subcontractor Overhead						5%	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						10%	$12.35
SUBTOTAL							$135.86
Contractor Overhead						5%	$6.79
SUBTOTAL							$142.65
Contractor Profit						10%	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 1 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 20 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume (saturated) = 31,100 CY. Excavated volume (unsaturated) = 42,500 CY. Volume of material increased by 20% to account for swelling.
Truck bed liners estimated at 1/day for approximately 25 trucks.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
32 Ft Dump Truck, 6 mil liner, disposable	2,500	EA	$0.00	$0.00	$28.50	$28.50	$71,250.00	
Truck bed covers	50,000	SY	$0.16	$0.00	$1.53	$1.69	$84,500.00	
Stripping topsoil & stockpiling, sandy loam								
400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28	
Excavation - Level B	29,411	CY	$0.48	$2.66	$0.00	$3.14	$92,313.87	Level B
Excavation	58,909	CY	$0.34	$1.66	$0.00	$2.00	$117,818.88	
Hauling to dewatering pads (saturated material)	37,320	CY	$0.63	$1.55	$2.18	$4.36	$162,715.20	
Spread on dewatering pads	37,320	CY	$0.48	$2.66	$0.00	$2.00	$74,640.00	Level B
SUBTOTAL							$612,395.23	
Area Cost Factor						69%	$422,553	
Subcontractor Overhead						5%	$21,127.64	
SUBTOTAL							$443,680	
Subcontractor Profit						10%	$44,368.03	
SUBTOTAL							$488,048	
Contractor Overhead						5%	$24,402.42	
SUBTOTAL							$512,451	
Contractor Profit						10%	$51,245	
							$563,695.87	

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Equipment Rental	5	MO	-	$2,000.00	-	$2,000.00	$10,000.00
Labor	20	WK	$2,600.00	-	-	$2,600.00	$52,000.00
Material cost	5	1800 LBS	-	-	$1,478.00	$1,478.00	$7,390.00
SUBTOTAL							$69,390.00

Contractor Overhead	*5%*	$3,469.50
SUBTOTAL		$72,859.50
Contractor Profit	*10%*	$7,285.95
TOTAL UNIT COST		$80,145.45

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level B; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		Not applicable
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
HAULING & DISPOSAL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 20 weeks. Excavation rate of approx. 60 CY/hr/excavator, two excavators . Excavated volume (saturated) = 31,100 CY. Excavated volume (unsaturated) = 42,500 CY. Cost developed based on transport and disposal of material at a facility near Montpelier, VL

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Loading onto trucks from stockpile	55,980	TON	-	-	-	$5.00	$279,900.00
Hauling material to disposal facility	110,400	TON	-	-	-	$30.00	$3,312,000.00
Disposal	110,400	TON	-	-	-	$60.00	$6,624,000.00
SUBTOTAL							$10,215,900.00
SUBTOTAL							
Contractor Overhead						5%	$510,795.00
							$10,726,695.00
SUBTOTAL							
Contractor Profit						10%	$1,072,670
							$11,799,364.50

Source of Cost Data:

Quotes/estimates received from disposal facility and transporter based on haul distance.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:

Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 5
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 20 wks. Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	5	MO	$0.00	$0.00	$3,000.00	$3,000.00	$15,000.00
Rental of Carbon Equipment & Operation	20	WK	$0.00	$0.00	$1,500.00	$1,500.00	$30,000.00
Material Cost - Carbon	16000	LB	$0.00	$0.00	$0.65	$0.65	$10,400.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	16000	LB	$0.00	$0.00	$1.00	$1.00	$16,000.00
							$73,400.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Odor Suppressant	85	TON	$0.00	$0.00	$7.50	$7.50	$637.50
Hay Bales, Staked	9600	LF	$0.21	$0.07	$2.00	$2.28	$21,888.00
Waste Pile Cover, 135lb Tear	2145	SY	$0.16	$0.00	$1.53	$1.69	$3,625.01
SUBTOTAL - Means							$41,600.51
Area Cost Factor						*69%*	$28,704
SUBTOTAL (Local and Means)							$102,104
Subcontractor Overhead						*5%*	$5,105.22
SUBTOTAL							$107,210
Subcontractor Profit						*10%*	$10,720.96
SUBTOTAL							$117,930.53
Contractor Overhead						*5%*	$5,897
SUBTOTAL							$123,827
Contractor Profit						*10%*	$12,382.71
TOTAL UNIT COST							$136,209.76

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not applied.
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-Ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder

Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 5
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Backfill excavated contaminated soil with clean fill;
Backfill estimate includes delivery, spreading and compaction of common fill.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	73,600	CY	$0.86	$1.98	$5.06	$7.90	$581,440.00
SUBTOTAL							$581,440.00
Area Cost Factor						*69%*	$401,194
Subcontractor Overhead						*5%*	$20,059.68
SUBTOTAL							$421,253
Subcontractor Profit						*10%*	$42,125.33
SUBTOTAL							$463,379
Contractor Overhead						*5%*	$23,168.93
SUBTOTAL							$486,548
Contractor Profit						*10%*	$48,654.75
TOTAL UNIT COST							$535,202.29

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						5%	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						10%	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement

RAA-7

RAA-7: Solidification/Stabilization

ASSUMPTIONS:

i. Discount rate for net present worth calculation of 7% per recommendation of EPA document 540-R-00-002, A Guide to Developing and Documenting Cost Estimates During the Feasibility Study.

ii. Cost estimating sources:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local vendors, RI costs for Pownal Tannery, and ongoing projects

iii. Abbreviations: CY = cubic yards; CF = cubic feet; SY = square yard; SF = square feet; LF = linear feet; LS = lump sum; EA = each; MWK = man weeks; MSF = thousand square feet; MO = month; WK = week; CYL = cylinder.

iv. Future use of site for recreational purposes. A separate investigation and cost estimate will need to be prepared for future site development.

v. For costing purposes, assumed that wetlands will be recreated at a 1:1 ratio.

vi. A 1.5 conversion factor was used to convert from CY to TON for sediment/sludge cost calculations.

vii. RI determination of waste quantities adequate for implementation of RAA-7. No additional sampling required to further delineate extent of waste.

CAPITAL COST ITEMS:

Estimated Time to Complete Alternative:

- Mobilization/Demobilization:	4 wks
- Site Work	5 wks
- Excavation/Solidification/Consolidation	23 wks
- Wetlands	3 wks
- Cover	14 wks
	12.75 Months

Note: Total project duration does not include seasonal impacts or delays.

1. Mobilization/Demobilization:

   Site construction activities will require office trailers and field office supplies, storage trailers, decontamination trailers, sanitary facilities, utilities (phone and electrical, including connect/disconnect fees and monthly charges), and site lighting. Assumed installation of electrical poles will be necessary to bring power to the lagoon area (1 pole/150 LF). An allowance for pre-/post- construction submittals and implementation plans is included based on hourly rates for engineering and office support. See hourly breakdown included with applicable Common Cost Worksheets.

2. Site Work:

   General Equipment: Includes construction support equipment such as site vehicles, dumpsters, and water coolers for the site office trailers. A portable generator is included to support equipment located away from electrical receptacles where using an extension cord would be impractical.

   Continuous Air Monitoring: Assumed 1 laborer at $55/hr will conduct continuous monitoring during 25% of site preparation and excavation. See applicable Common Cost Sub-Element Worksheet for breakdown of monthly expense.

   Clearing/Grubbing: Will need to clear and grub site to facilitate movement of construction equipment. See applicable RAA-7 Capital Cost Sub-Element Worksheet for additional assumptions.

   Well Abandonment/Replacement: Assumed 7 wells in the lagoon area will need to be abandoned/replaced to accommodate cap construction and excavation of perimeter berm between Hoosic River and Lagoons 1 and 5. Cost estimate based on experience.

   Surveying: Assumed 2-man crew with GPS at $135/hr onsite for 1 week during general site preparation and also for 37 weeks during excavation and capping activities at 3 days/week. The unit cost estimate was based on information from an ongoing project. The Subcontractor's cost includes hours for 1 supervisor at $50/hr and has an additional mark up to include Contractor's O&P.

   Erosion-Dust Control: Assumed use of a water truck for dust suppression, the installation of silt fencing with hay bales along the access road bordering the Hoosic River (approximately 1,800 LF), and an allowance for construction of one sedimentation trap (50'x 25'x 6'). Exact location, size and grading requirements to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for sedimentation basin material and quantity assumptions made for costing purposes.

   Access Roads-Perimeter: A temporary perimeter road around landfill cap will need to be installed to facilitate excavation/stabilization/capping activities (using 2,200 LF of road). See applicable Common Cost Sub-Element Worksheet for breakdown of unit cost/100 LF. Road cross-section consists of a layer of geotextile, and 1' of 4" to 6" ROC.

Access Roads-Lagoons: Road access, through Lagoons 1 and 5, is needed to facilitate excavation of contaminated material (using 500 LF). Road cross-section consists of 3' of subgrade fill, a layer of geotextile, and 2' of 4" to 6" ROC.

Perimeter Construction/Security Fence: Assumed the removal of existing fence and the installation of a 7-foot high fence around the entire perimeter of the Lagoon area. See applicable RAA-7 Capital Cost Sub-Element Worksheet for additional assumptions.

Backfill Lagoon 2: Lagoon 2 will be backfilled to site grade to create a staging area for site trailers, decontamination facilities and structures. The final two feet of backfill will be 1.5" crushed gravel. See applicable Common Cost Sub-Element Worksheet for additional assumptions.

Decontamination Structure – Heavy Equipment: Two, 8" thick, 25'x 65', concrete pads will be constructed in the staging area to remove sediment from equipment. Pad construction includes a 6" gravel base, a concrete curb and sump with 12" corrugated pipe around perimeter. Exact locations and size to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for assumed quantities and material unit costs.

Decontamination Structure – Personnel: Two, 4" thick, 6' x 6', concrete pads will be constructed in the staging area. Pad construction includes a 4" gravel base with a concrete curb around the perimeter. Exact locations and size to be determined during design phase. See applicable Common Cost Sub-Element Worksheet for assumed quantities and material unit costs.

Dewater Standing Water in Lagoons: Standing water volume estimate of approximately 2,841,000 gal in Lagoons 1, 2, 4 and 5. Requires the use of one 300 GPM pump operating 24 hrs/day for 1 week to remove initial volume. Assumes no immediate ground water recharge. During construction, figure standing water will need to be removed approximately once per month to account for slow ground water recharge and precipitation accumulation. Dewatering of standing water assumed to be above the water table. See applicable Common Cost Sub-Element Worksheet for quantities and unit costs.

Collection & Treatment of Standing Water in Lagoons: Will treat standing water in lagoons using eight Carbon Adsorption units. Each unit consists of two vessels containing 1,000 lbs of carbon/vessel; 2,000 lbs of carbon assumed to treat 100,000 gallons. Fractionation tanks (20,000 gal/tank) will be needed to store untreated water. Discharge of treated water will occur onsite through two infiltration galleries assumed to be 20'x 5'x 5' and consisting of geotextile and riprap. Exact location and size to be determined during design. Analytical testing will be conducted prior to initial discharge to ensure proper treatment.

Continuous Cleanup: Cleanup of site during construction activities – 1 laborer.

Site Restoration: Estimate from previous project. Costs to remove concrete structures, repair access roads, and clean up debris.

3. Excavation of Waste Material, Backfill & Wetland Mitigation:

Excavation: Excavation rate of approx. 60 CY/hr/excavator, two excavators. Excavated volume = 40,800 CY sludge; 12,778 CY cover soils Lagoon 1. Excavation rate limited by capacity of S/S treatment process. Cover soil from Lagoon 1 will be stockpiled for future use or disposal. Reuse of material not included in cost estimate. Quantity of removed material padded by 20%. Other costs include truck bed liners (2 liners/day) and covers (1 cover/day). Excavation assumed to be conducted without dewatering below the water table. 30% of operation assumed to occur under Level B conditions.

Odor Suppression: Application of foam odor suppressant during excavation and capping of contaminated material. Costs for labor include 1 laborer at $65/hr. Material costs include shipping.

Confirmatory Soil Sampling: Needed to verify/confirm that desired concentration levels have been achieved through excavation. Analysis estimate includes Pest/PCBs, VOCs, SVOCs, Metals/CN and Dioxins.

Technician – Soil Sampling: Labor required to collect samples during excavation - 1 technician at $55/hr. Includes contractor mark up for overhead and profit.

Sludge Dewatering Structures: Construction costs for a 30' x 40' dewatering structure to store saturated, contaminated, material before treatment. Components for construction determined from EPA document 625/6-89/022; S/S of CERCLA and RCRA Wastes: Physical Tests, Chemical Testing Procedures, Technology Screening and Field Activities, Section 7.1.3. - Untreated Waste Storage. Exact number and location of structures to be determined in design phase.

Level B Equipment/Operation/Shipping Allowance: Assuming a crew of 15 will need equipment and supplies for 30% of the excavation of the contaminated sludge.

Decontamination of Heavy Equipment: Includes decontamination of 10 pieces of equipment, once/day during initial site work, excavation and capping.

Operation of Trash Pump: Cost to operate a trash pump for decontamination over period of initial site work, excavation and capping. See Common Cost Sub-Element Worksheet for decontamination of heavy equipment.

Backfill Excavated Material: Assuming all of the material excavated will be backfilled with clean material from a local borrow source, approximately 45,600 CY of fill. Backfill 75% of Lagoon 1 to grade, approximately 20,000 CY.

Wetland Mitigation: Assuming 1:1 replacement of 2.4 acres of wetlands with locations of recreated wetland areas to be determined at the design stage.

4. Solidification/Consolidation of Waste Material:

Solidification: Assuming for costing purposes a mixture of 5% Cement (Type 2), 10% Fly Ash (C) with water as needed and only treating the excavated wastes from Lagoons 1 and 5 and the perimeter berm material between Lagoons 1 and 5 and the Hoosic River and the berm material between Lagoons 1 and 5.

TCLP Analysis: Information on frequency of analysis in an email from Richard Scott; will input first thing Monday morning.

Collection & Treatment of Runoff from Dewatering Structures: Estimated time to complete excavation and initial installation of cover subgrade is assumed to be 23 wks. Analytical monitoring for compliance before direct discharge into onsite infiltration galleries.

Backfill w/common fill – Subgrade: Means unit cost that includes loading washed and graded sand at pit, delivering to site, and dumping sand at location. Unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Rough Grading of Subgrade: Means unit cost for grading with dozer. Unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Compaction of Subgrade: Means unit cost that includes compacting subgrade using a roller, 6" lifts. Unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Spread/Compact Contaminated Material: Means unit cost that includes spreading dumped borrow and compacting with roller in 8" lifts. Unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

5. Cover: Cover components (from base to top) consists of a layer of geotextile, 1.5 feet of cover fill and 6" of topsoil. Top of landfill sloped 5% to 7%; sideslopes maximum of 3:1. Area of cap = 4.0 acres.

Cover Soil (Common Fill): Thickness of fill layer taken as 18" over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres x 30% increase x 1.5 TONS/CY = approx. 18,900 tons. Gas venting wells costed by assuming 1 gas vent/ACRE at $1,500/vent based on engineering judgment and experience.

Geosynthetics: One layer of geotextile installed over 4 acres.

Topsoil: 6" layer of topsoil over an approximate 4 acre area increased by 30% to account for side slopes. Assuming weight of topsoil = 1.5 TONS/CY x 4200 CY = 6,300 tons.

Geotechnical Testing of Soil Materials: Grain size analysis at a rate of 1 test/500 tons of material for gas collection layer, granular drainage layer and topsoil.

Drainage Structures: Estimate of material required to build drainage structures for landfill cap assuming drainage swale around perimeter of cap footprint (approx. 2,400 LF) width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 SF were assumed for construction of heavy drainage outlet structures.

Erosion Control Blankets: Installation of blankets over cap area of 4.0 acres. Means unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Seeding/Mulch/Fertilizer: Application over cover area of 4.0 acres. Means unit price includes localization factor and markups for subcontractor and contractor overhead and profit.

Land Use Restriction: See hourly breakdown and rates included with applicable Common Cost Sub-Element Worksheets.

Alternative 7
SOLIDIFICATION/STABILIZATION

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 7 consists of excavation, soldification, consolidation and capping of waste with clean cover. Capital costs occur in Year 0 . Annual costs occur in Years 1-6.

CAPITAL COSTS:

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Mobilization / Demobilization					
Construction Equipment	2	LS	$2,522.11	$5,044	Excavators, loaders, etc.
Submittals/Implementation Plans	1	LS	$100,985.69	$100,986	
Temporary Facilities & Utilities	1	LS	$96,819.62	$96,820	
Field Office Supplies	1	LS	$14,519.33	$14,519	
Post-Construction Submittals	1	LS	$29,481.95	$29,482	Post-construction report
SUBTOTAL				$246,851	
Site Work					
General Equipment and Supplies	1	LS	$64,835.94	$64,836	
Continuous Air Monitoring	13	MO	$5,120.17	$65,282	
Clearing/Grubbing	1	LS	$20,474.62	$20,475	Heavy brush, light trees, clear, grub, haul
Well Abandonment	7	EA	$5,775.00	$40,425	
Surveying	114	DAY	$1,709.40	$194,872	2-man crew @ 3 days/wk
Erosion/Dust Control Measures	1	LS	$44,780.74	$44,781	
Access Roads - Lagoons	5	100 LF	$5,075.78	$24,110	
Access Roads - Perimeter	22	100 LF	$1,657.30	$36,461	
Perimeter Fence	1	LS	$137,680.62	$137,681	
Backfill Lagoon 2	1	LS	$506,827.00	$506,827	
Decontamination Structure - Heavy Equipment	2	LS	$29,360.54	$58,721	
Decontamination Structure - Personnel	2	LS	$311.13	$622	
Dewater Standing Water in Lagoons	1.5	WK	$9,940.27	$14,910	
Collect and Treat Standing Water	3	WK	$123,528.43	$370,585	
Continuous Cleanup	44	MWK	$819.22	$36,046	Means including O&P and localization factor
Site Restoration	1	LS	$5,000.00	$5,000	
SUBTOTAL				$1,621,633	
Excavation of Waste Material, Backfill and Wetlands Mitigation					
Excavation	1	LS	$395,829.33	$395,829	
Odor Suppression	1	LS	$20,995.59	$20,996	
Confirmatory soil sampling	50	EA	$1,100.00	$55,000	
Technician - soil sampling	1	LS	$58,443.00	$58,443	
Sludge Dewatering Structures	4	LS	$3,212.65	$12,851	
Level B Equipment	15	PER	$5,600.30	$84,005	
Level B Operation	1.91	MO	$13,349.08	$25,560	
Level B Shipping Allowance	1	LS	$5,000.00	$5,000	
Decontamination of Heavy Equipment	2,100	EA	$220.44	$462,915	
Operation of Trash Pump	210	DAY	$156.91	$32,952	
Backfill Excavated Material	1	LS	$476,677.20	$476,677	
Lagoon Area Restoration/Stabilization	2.4	ACRE	$46,200.00	$110,880	
SUBTOTAL				$1,741,108	
Solidification/Consolidation of Waste Material					
Solidification	1	LS	$1,563,784.76	$1,563,785	
TCLP Analysis	204	EA	$131.67	$26,861	
Collection & Treatment of Runoff from Dewatering Structures	1	LS	$141,279.43	$141,279	
Backfill w common fill - subgrade	3,872	CY	$21.01	$81,332	
Rough Grading of Subgrade	19,360	SY	$2.95	$57,025	
Compaction of Subgrade	174,240	SF	$0.44	$76,984	
Spread/Compact Stabilized Material	40,800	CY	$0.96	$39,058	Padded 20%
SUBTOTAL				$1,986,324	
Cover					
Geotextile	1	LS	$43,603.12	$43,603	
Cover Soil (common fill)	1	LS	$183,771.12	$183,771	
Topsoil	1	LS	$143,202.36	$143,202	
Geotechnical Testing of Soil Materials	50	EA	$142.36	$7,166	Soil Tests/500 tons of material; Grain Size
Drainage Structures	1	LS	$43,804.35	$43,804	
Erosion Control Blankets	25,168	SY	$1.12	$28,263	
Seeding/Mulch/Fertilizer	25,168	SY	$1.37	$34,518	
SUBTOTAL				$484,328	

Alternative 7
SOLIDIFICATION/STABILIZATION

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 7 consists of excavation, soldification, consolidation and capping of waste with clean cover. Capital costs occur in Year 0 . Annual costs occur in Years 1-6.

SUBTOTAL			$6,080,244
Contingency (20% scope + 15% bid)	35%		$2,128,085
SUBTOTAL			$8,208,329
Project Management	5%		$410,416
Remedial Design	6%		$492,500
Construction Management	6%		$492,500
Institutional Controls	-		$31,883
TOTAL CAPITAL COST:			$9,603,745

ANNUAL O&M COSTS (Year 1):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	2	EA	$3,000.00	$6,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"; Including markups
Groundwater Sampling - Equipment and Labor	4	EA	$32,771.92	$131,088	
Groundwater Analysis - VOCs, SVOCs, Metals	60	EA	$2,000.00	$120,000	12 locations, quarterly; inc 3 QA/QC Samples
Groundwater Analysis - Dioxins	14	EA	$750.00	$10,500	- One round; inc 2 QA/QC Samples
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples.
Sediment Analysis - Dioxins	5	EA	$800.00	$4,000	1 QA/QC
SUBTOTAL				$286,592	
Professional/Technical Support					
Progress Reports			*15%*	$42,989	
O&M Oversite			*5%*	$14,330	
SUBTOTAL				$343,911	
Contingency			*10%*	$34,391	
TOTAL ANNUAL O&M COST (Year 1)				$378,302	

ANNUAL O&M COSTS (Years 2-3):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Cap Inspections	1	EA	$3,000.00	$3,000	
Mowings (2/year)	227	MSF	$2.84	$940	Lawn, riding mower, 48" - 58"
Groundwater Sampling - Equipment and Labor	2	EA	$32,771.92	$65,544	
Groundwater Analysis - VOCs, SVOCs, Metals	30	EA	$2,000.00	$60,000	12 locations, semi; inc 3 QA/QC Samples
Groundwater Analysis	14	EA	$750.00	$10,500	- Inc 2 QA/QC Samples
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxin	5	EA	$800.00	$4,000	1 QA/QC
SUBTOTAL				$158,048	
Professional/Technical Support					
Progress Reports			*15%*	$23,707	
O&M Oversite			*5%*	$7,902	
SUBTOTAL				$189,658	
Contingency			*10%*	$18,966	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 2-3)				$208,624	

Alternative 7
SOLIDIFICATION/STABILIZATION

COST ESTIMATE SUMMARY

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 7 consists of excavation, solidification, consolidation and capping of waste with clean cover. Capital costs occur in Year 0 . Annual costs occur in Years 1-6.

ANNUAL O&M COSTS (Years 4-6):

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL	NOTES
Site Monitoring					
Groundwater Sampling - Equipment and Labor	1	EA	$32,771.92	$32,772	
Groundwater Analysis - VOCs, SVOCs, Metals	15	EA	$2,000.00	$30,000	12 locations, annual; inc 3 QA/QC Samples
Groundwater Analysis	14	EA	$1,500.00	$21,000	- Inc 2 QA/QC Samples
Sediment Sampling - Equipment and Labor	1	EA	$6,364.10	$6,364	
Sediment Analysis - VOCs, SVOCs, Metals	7	EA	$1,100.00	$7,700	4 locations, annually; inc 3 QA/QC Samples
Sediment Analysis - Dioxin	5	EA	$800.00	$4,000	1 QA/QA
SUBTOTAL				$101,836	
Professional/Technical Support					
Progress Reports			*15%*	$15,275	
O&M Oversite			*5%*	$5,092	
SUBTOTAL				$122,203	
Contingency			*10%*	$12,220	
SUBTOTAL					
TOTAL ANNUAL O&M COST (Years 4-6)				$134,424	

PRESENT VALUE ANALYSIS:

COST TYPE	YEAR	TOTAL COST	TOTAL COST/YR	DISCOUNT FACTOR	PRESENT VALUE	NOTES
Capital Cost	0	$9,603,745	$9,603,745	-	-	See support sheet for discount factors and Present Value calculation
Annual O&M Cost	1-2	$756,604	$378,302	-	-	
Annual O&M Cost	3-5	$625,872	$208,624	-	-	
Annual O&M Cost	6-15	$1,344,235	$134,424	-	-	

Remedial Action Report

TOTAL PRESENT VALUE OF ALTERNATIVE $10,597,759

Alternative 7
IN SITU RCRA/CERCLA FINAL COVER

PRESENT VALUE ANALYSIS

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Description: Alternative 7 consists of excavation, soldification, consolidation and capping of waste with land use restrictions. Capital costs occur in Year 0 . Annual costs occur in Years 1-6.

Year	Capital Costs ($)	Annual O&M Costs ($)	Periodic Costs ($)	Total Costs ($)	Discount Factor at 7%	Total Present Value Cost at 7% ($)
0	$9,603,745	$0		$9,603,745	1.000	$9,603,745
1		$378,302		$378,302	0.935	$353,712
2		$208,624		$208,624	0.873	$182,129
3		$208,624		$208,624	0.816	$170,237
4		$134,424		$134,424	0.763	$102,565
5		$134,424		$134,424	0.713	$95,844
6		$134,424		$134,424	0.666	$89,526
7				$0	0.623	$0
8				$0	0.582	$0
9				$0	0.544	$0
10				$0	0.508	$0
11				$0	0.475	$0
12				$0	0.444	$0
13				$0	0.415	$0
14				$0	0.388	$0
15				$0	0.362	$0
16				$0	0.339	$0
17				$0	0.317	$0
18				$0	0.296	$0
19				$0	0.277	$0
20				$0	0.258	$0
21				$0	0.242	$0
22				$0	0.226	$0
23				$0	0.211	$0
24				$0	0.197	$0
25				$0	0.184	$0
26				$0	0.172	$0
27				$0	0.161	$0
28				$0	0.150	$0
29				$0	0.141	$0
30				$0	0.131	$0

TOTAL PRESENT VALUE OF ALTERNATIVE $10,597,759

Alternative 7
Capital Cost Sub-Element
CONSTRUCTION EQUIPMENT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilization and demobilization costs for large equipment.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Dozer	2	EA	-	$274	-	$274	$548.00
Backhoe/FE Loader	1	EA	-	$274	-	$274	$274.00
Dump Truck	3	EA	-	$274	-	$274	$822.00
Excavator	2	EA	-	$274	-	$274	$548.00
Loader	1	EA	-	$274	-	$274	$274.00
Roller	1	EA	-	$274	-	$274	$274.00
							$2,740.00
Area Cost Factor						*69%*	$1,890.60
Subcontractor Overhead						*5%*	$94.53
SUBTOTAL							$1,985.13
Subcontractor Profit						*10%*	$198.51
SUBTOTAL							$2,183.64
Contractor Overhead						*5%*	$109.18
SUBTOTAL							$2,292.83
Contractor Profit						*10%*	$229.28
TOTAL UNIT COST							$2,522.11

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
SUBMITTALS & IMPLEMENTATION PLANS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Preconstruction submittals are assumed to include health and safety plan, construction QA/QC plan and spill prevention plan.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering							
Permitting	320	HR	$75.00	$0.00	$0.00	$75.00	$24,000.00
Design	480	HR	$75.00	$0.00	$0.00	$75.00	$36,000.00
Meetings	100	HR	$75.00	$0.00	$0.00	$75.00	$7,500.00
Office Support							
Support staff	80	HR	$40.00	$0.00	$0.00	$40.00	$3,200.00
Office Expenses	1	LS	$0.00	$0.00	$5,000.00	$5,000.00	$5,000.00
SUBTOTAL							$75,700.00
Subcontractor Overhead						*5%*	$3,785.00
SUBTOTAL							$79,485.00
Subcontractor Profit						*10%*	$7,948.50
SUBTOTAL							$87,433.50
Contractor Overhead						*5%*	$4,371.68
SUBTOTAL							$91,805.18
Contractor Profit						*10%*	$9,180.52
TOTAL UNIT COST							$100,985.69

Source of Cost Data:

Engineering judgement

Alternative 7
Capital Cost Sub-Element
TEMPORARY FACILITIES AND UTILITIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Mobilize/rent temporary facilities and utilities associated with site work. Assuming onsite construction time of 51.2 weeks at 4 weeks/month.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Mob/Demob Temporary Storage Trailer (2 units)	2	EA	-	-	-	$340	$680
Temporary Storage Trailer (2 units)	26	MO	-	-	-	$150	$3,825
Temporary Fencing	2,100	LF				$6.90	$14,490
Portable Toilets - Chemical (3 units)	38	MO	-	-	-	$75	$2,869
Mob/Demob Temporary Office with steps (2 Units)	2	EA	-	-	-	$430	$860
Temporary Office with steps (2 Units)	26	MO	-	-	-	$540	$13,770
Install power poles (2)	2	EA	-	-	-	$2,847	$5,694
Utility connection/disconnection	2	EA	$0	$0	$2,000	$2,000	$4,000
Utilities (phone and electric)	13	MO	$0	$0	$500	$500	$6,375
SUBTOTAL - Local							$52,563
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Decontamination Trailer	13	MO	$0	$0	$2,275	$2,275	$29,006
Area Cost Factor						*69%*	$20,014.31
SUBTOTAL (Local and Means)							$72,577
Subcontractor Overhead						*5%*	$3,628.85
SUBTOTAL							$76,205.92
Subcontractor Profit						*10%*	$7,620.59
SUBTOTAL							$83,826.51
Contractor Overhead						*5%*	$4,191
SUBTOTAL							$88,018
Contractor Profit						*10%*	$8,801.78
TOTAL UNIT COST							$96,820

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Local unit costs from on ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	[ ]	Not Applicable
Escalation to Base Year	[ ]	Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	[X]	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	[X]	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	[X]	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Purchase miscellaneous field office supplies.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Office Supplies								
Cordless phone with answering machine	2	EA	$0.00	$0.00	$90.00	$90.00	$180.00	
Computer	2	MO	$0.00	$0.00	$480.00	$480.00	$960.00	$40/MO for 6Mo
Surge Protectors	2	EA	$0.00	$0.00	$28.49	$28.49	$56.98	
Floppy disks	2	PACK	$0.00	$0.00	$9.99	$9.99	$19.98	40/PACK
Printer/fax/copier	1	EA	$0.00	$0.00	$199.97	$199.97	$199.97	
HP Printer toner	20	EA	$0.00	$0.00	$29.99	$29.99	$599.80	
Standard Task Chair	5	EA	$0.00	$0.00	$119.75	$119.75	$598.75	
Standard Folding Chair	5	CARTON	$0.00	$0.00	$77.35	$77.35	$386.75	5/CARTON
Shelving	2	EA	$0.00	$0.00	$317.50	$317.50	$635.00	H74xW36xD21
Folding Tables - Heritage Series	2	EA	$0.00	$0.00	$102.15	$102.15	$204.30	H29xW30xL96
Pens	10	PACK	$0.00	$0.00	$3.89	$3.89	$38.90	60/PACK
Paper	20	CASE	$0.00	$0.00	$20.99	$20.99	$419.80	5000/CASE
Pencils	10	PACK	$0.00	$0.00	$3.19	$3.19	$31.90	48/PACK
Highlighters	5	PACK	$0.00	$0.00	$4.35	$4.35	$21.75	43/PACK
Notepads	10	EA	$0.00	$0.00	$4.35	$4.35	$43.50	
Sharpies (thick)	25	EA	$0.00	$0.00	$1.52	$1.52	$38.00	
Sharpies (Thin)	50	EA	$0.00	$0.00	$0.79	$0.79	$39.50	
Stapler	4	EA	$0.00	$0.00	$9.99	$9.99	$39.96	
Staples	2	BOX	$0.00	$0.00	$2.99	$2.99	$5.98	1000/BOX
Staple remover	4	EA	$0.00	$0.00	$0.69	$0.69	$2.76	
Scotch Tape	5	EA	$0.00	$0.00	$1.22	$1.22	$6.10	
Paper clips	5	PACK	$0.00	$0.00	$1.69	$1.69	$8.45	1000/PACK
Binder clips	5	PACK	$0.00	$0.00	$3.55	$3.55	$17.75	60/PACK
Masking tape	5	PACK	$0.00	$0.00	$5.29	$5.29	$26.45	4/PACK
Hanging folders	5	BOX	$0.00	$0.00	$3.99	$3.99	$19.95	25/BOX
Manila folders	2	BOX	$0.00	$0.00	$4.19	$4.19	$8.38	100/BOX
Scissors	4	PACK	$0.00	$0.00	$16.25	$16.25	$65.00	2/PACK
Engineer's scale	5	EA	$0.00	$0.00	$3.65	$3.65	$18.25	
Tacks	5	PACK	$0.00	$0.00	$0.25	$0.25	$1.25	100/PACK
Post-it-notes (4"X6")	5	PACK	$0.00	$0.00	$6.99	$6.99	$34.95	6/PACK
Post-it-notes (3"X4")	5	PACK	$0.00	$0.00	$10.99	$10.99	$54.95	12/PACK
Post-it-notes (1.5"X2")	5	PACK	$0.00	$0.00	$4.19	$4.19	$20.95	12/PACK
Mag-Lite Flashlight	5	EA	$0.00	$0.00	$24.95	$24.95	$124.75	L=8.5"
Batteries (AA)	10	PACK	$0.00	$0.00	$6.15	$6.15	$61.50	8/PACK
Batteries (AAA)	5	PACK	$0.00	$0.00	$8.49	$8.49	$42.45	12/PACK
Batteries (C)	5	PACK	$0.00	$0.00	$9.99	$9.99	$49.95	8/PACK
Soft Wastbaskets	4	EA	$0.00	$0.00	$8.20	$8.20	$32.80	H19xW15xD11
55-gal Waste Containers	5	EA	$0.00	$0.00	$62.95	$62.95	$314.75	
Paper towels	50	PACK	$0.00	$0.00	$15.75	$15.75	$787.50	15/PACK
Trash bags	50	PACK	$0.00	$0.00	$8.49	$8.49	$424.50	50/PACK
Broom	1	EA	$0.00	$0.00	$9.19	$9.19	$9.19	
Dust pan	1	EA	$0.00	$0.00	$5.15	$5.15	$5.15	
Disinfectant Cleaner	5	EA	$0.00	$0.00	$6.59	$6.59	$32.95	
First Aid Kit	1	EA	$0.00	$0.00	$26.10	$26.10	$26.10	
Emergency Eye Wash Station	1	EA	$0.00	$0.00	$24.15	$24.15	$24.15	
Extension cord (50')	3	EA	$0.00	$0.00	$19.90	$19.90	$59.70	
Locks (2")	10	EA	$0.00	$0.00	$11.55	$11.55	$115.50	
Locks (3/4")	10	EA	$0.00	$0.00	$8.25	$8.25	$82.50	
Shipping Allowance	1	LS	-	-	-	$5,000.00	$5,000.00	
SUBTOTAL							$11,999.45	

Common Costs
Capital Cost Sub-Element
FIELD OFFICE SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Subcontractor Profit	*10%*	$1,200
SUBTOTAL		$13,199
Prime Contractor Profit	*10%*	$1,319.94
TOTAL UNIT COST		$14,519

Source of Cost Data:
Equipment and supplies from local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		No labor involved, material costs
Escalation to Base Year		2001 material costs
Area Cost Factor		No area cost factor applied; Not applicable
Subcontractor Profit	X	Assuming markup of 10%
Prime Contractor Profit	X	Assuming markup of 10%

Common costs
Capital Cost Sub-Element
POST-CONSTRUCTION SUBMITTALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Engineering	240	HR	$75.00	$0.00	$0.00	$75.00	$18,000.00
Office Support							
Support staff	40	HR	$40.00	$0.00	$0.00	$40.00	$1,600.00
Office Expenses	1	LS	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00
SUBTOTAL							$22,100.00
Subcontractor Overhead						5%	$1,105.00
SUBTOTAL							$23,205.00
Subcontractor Profit						10%	$2,320.50
SUBTOTAL							$25,525.50
Contractor Overhead						5%	$1,276.28
SUBTOTAL							$26,801.78
Contractor Profit						10%	$2,680.18
TOTAL UNIT COST							$29,481.95

Source of Cost Data:
Engineering judgement

Alternative 7
Capital Cost Sub-Element
SITE GENERAL EQUIPMENT & SUPPLIES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming total time onsite of approx 13 months: 4 wks mob/demob; 5 wks site prep; 23 wks excavation and solidification/stabilization; 14 wks capping; 2 wks site restoration; 8 wks wetlands restoration (5 wks concurrent with other tasks).

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction Signs	4	EA	$0.00	$0.00	$82.80	$82.80	$331.20
Install/Remove Dumpsters	2	EA	-	-	-	$100.00	$200.00
Dumpsters (2 Units)	26	MO	-	-	-	$30.00	$765.00
Install/Remove Water Coolers	2	EA	-	-	-	$100.00	$200.00
Water Cooler (2 Units)	26	MO	-	-	-	$125.00	$3,187.50
SUBTOTAL							$4,683.70
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
SUV Rental	13	MO	$0.00	$0.00	$720.00	$720.00	$9,180.00
Pickup Truck Rental	13	MO	$0.00	$0.00	$720.00	$720.00	$9,180.00
Generator 250KW	13	MO	$0.00	$3,000.00	$0.00	$3,000.00	$38,250.00
SUBTOTAL							$56,610.00
Area Cost Factor						*69%*	$39,060.90
SUBTOTAL (Local & Means)							$43,745
Subcontractor Overhead						*5%*	$2,187
SUBTOTAL							$45,931.83
Subcontractor Profit						*10%*	$4,593.18
SUBTOTAL							$50,525.01
DESCRIPTION (Subcontractor Costs)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Weather Station	13	MO	$0.00	$0.00	$360.00	$360.00	$4,590.00
Camera	51	WK	$0.00	$0.00	$5.00	$5.00	$255.00
Tool Box	13	MO	$0.00	$0.00	$60.00	$60.00	$765.00
							$5,610.00
SUBTOTAL (Local, Means & Sub)							$56,135.01
Contractor Overhead						*5%*	$2,806.75
SUBTOTAL							$58,941.76
Contractor Profit						*10%*	$5,894.18
TOTAL UNIT COSTS							$64,836

Source of Cost Data:

Local vendor and costs from internal ongoing projects.
Building Construction Cost Data, RSMeans, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		For Level B - 42% Labor and 60% Equipment; not applicable
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
CONTINUOUS AIR MONITORING

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Prepared by: A.H. Date: 4/23/01
Checked by: Date:

Work Statement:
Continuous air monitoring around site perimeter at 8 hrs/day and 5 days/wk. Conducted during full implementation of each alternative.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Flame-ionization detector - Rent	1	MO	$0.00	$0.00	$640.00	$640.00	$640.00
Cal-gas	1	EA	$0.00	$0.00	$120.00	$120.00	$120.00
Industrial Scientific MG140 gas meter	1	MO	$0.00	$0.00	$400.00	$400.00	$400.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
SUBTOTAL							$1,310.00
Subcontractor Overhead						5%	$65.50
SUBTOTAL							$1,375.50
Subcontractor Profit						10%	$137.55
SUBTOTAL							$1,513.05

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Walkie Talkies - Rent (3 pair)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Miniram Aerosol Monitor (5 Units)	1	MO	$0.00	$0.00	$360.00	$360.00	$360.00
Laborers (1 @ $55/hr)	0.25	MO	$8,800.00	$0.00	$0.00	$8,800.00	$2,200.00
SUBTOTAL							$2,920.00
SUBTOTAL (Local and Subcontractor)							$4,433
Contractor Overhead						5%	$221.65
SUBTOTAL							$4,654.70
Contractor Profit						10%	$465.47
TOTAL UNIT COST/MO							$5,120.17

Source of Cost Data:
Costs for rental equipment from vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
CLEAR AND GRUB

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Clear and grub to facilitate excavation, consolidation and hauling. Material to be disposed of onsite.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Heavy Brush without Grub, Chipping	11	ACRE	$909.73	$1,055.00	$0.00	$1,964.73	$22,243.49
SUBTOTAL							$22,243
Area Cost Factor						69%	$15,348.01
Subcontractor Overhead						5%	$767
SUBTOTAL							$16,115
Subcontractor Profit						10%	$1,612
SUBTOTAL							$17,727
Contractor Overhead						5%	$886.35
SUBTOTAL							$18,613
Contractor Profit						10%	$1,861
TOTAL UNIT COST							$20,474.62

Source of Cost Data:
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
EROSION-DUST CONTROL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Dust suppression/Pass cost at $55.64/per acre using 3 acres; as needed application over period of excavation and cap construction - approx. 42 weeks at 5 days/wk and 1 pass/day. Silt fencing with hay bales installed along access road bordering river. Construction of sedimentation traps based on previous project. See Sub-Element Cost Worksheet for breakdown. Trench excavation volume taken as 1800' x 2' x 0.5'.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Watering Truck - dust suppression/Pass	210	PASS	$0.00	$0.00	$0.00	$166.89	$35,046.90
Silt Fence, poly, 3' high, adverse conditions	1800	LF	$0.37	$0.00	$0.30	$0.67	$1,206.00
Hay Bales, Staked	1800	LF	$0.21	$0.07	$2.00	$2.28	$4,104.00
Place and Remove Hay Bales (maintenance)	22	TONS	$178.00	$57.50	$50.00	$285.50	$6,281.00
Trench excavation, 6" depth	70	CY	$2.73	$1.35	$0.00	$4.08	$285.60
Sedimentation traps	1	LS	$0.00	$0.00	$0.00	$965.12	$965.12
SUBTOTAL - Means							$47,889
Area Cost Factor						*69%*	$33,043
DESCRIPTION (Local)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Water	11	MO	$0.00	$0.00	$0.00	$50.00	$525.00
SUBTOTAL (Local and means)							$33,568
Subcontractor Overhead						*5%*	$1,678
SUBTOTAL							$35,247
Subcontractor Profit						*10%*	$3,525
SUBTOTAL							$38,771
Contractor Overhead						*5%*	$1,938.56
SUBTOTAL							$40,710
Contractor Profit						*10%*	$4,071
TOTAL UNIT COST							$44,780.74

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
SEDIMENTATION TRAPS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date:

Work Statement:
Basin size of 50'x25'x6'. Inlet/Outlet structure dimensions approx 6'x6'x1.5'. Assuming 6" dia PE pipe.
Marked up for O&P on erosion control cost worksheet.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile non-woven	2.67	SY	$0.00	$0.00	$0.00	$1.50	$4.00
1.5" Crushed Stone	10	TON	$0.00	$0.00	$5.50	$5.50	$55.00
- Delivery	1	HR	$0.00	$0.00	$0.00	$40.00	$40.00
SUBTOTAL							$99.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation	278	CY	$0.34	$1.66	$0.00	$2.00	$555.56
Rock Cover, Riprap, Heavy (25 to 500 lb)	6	CY	$3.00	$2.38	$15.78	$21.16	$126.96
6" Diameter Polyvinyl Chloride Pipe	20	LF	$1.72	$4.59	$2.87	$9.18	$183.60
							$866.12

SUBTOTAL $965.12

Source of Cost Data:
Subcontractor estimate - geotextile installed, on 3/9/01. Soil estimates from local borrow source obtained on 2/27/01.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Building Construction Cost Data, RS Means, 58th Edition, 2000
Marked up for O&P on element sheet for erosion control measures.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads into lagoons for transport of excavated materials to on-site stockpile areas.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	289	TON	$0.00	$0.00	$3.00	$3.00	$866.67
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$1,107.41

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	222	CY	$0.34	$1.66	$0.00	$2.00	$444.44
Loading of Fill at pit	222	CY	$0.39	$1.91	$0.00	$2.30	$511.11
Hauling Fill, 10 mi round trip	222	CY	$1.66	$5.10	$0.00	$6.76	$1,502.22
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$3,457.61

Area Cost Factor	*69%*	$2,386
SUBTOTAL (Local and Means)		$3,493
Subcontractor Overhead	*5%*	$174.66
SUBTOTAL		$3,667.82
Subcontractor Profit	*10%*	$366.78
SUBTOTAL		$4,034.60

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02

SUBTOTAL (Local, Means and Sub)		$4,394.62
Contractor Overhead	*5%*	$219.73
SUBTOTAL		$4,614.35
Contractor Profit	*10%*	$461.43
TOTAL UNIT COST/100 LF		$5,075.78

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
TEMPORARY ACCESS ROADS (COST PER 100LF)

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Install temporary access roads for transport of excavated materials. 1 foot of 4" to 6" ROC.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill - Subgrade	0	TON	$0.00	$0.00	$3.00	$3.00	$0.00
Crushed Stone	48.1	TON	$0.00	$0.00	$5.00	$5.00	$240.74
SUBTOTAL							$240.74

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	0	CY	$0.34	$1.66	$0.00	$2.00	$0.00
Loading of Fill at pit	0	CY	$0.39	$1.91	$0.00	$2.30	$0.00
Hauling Fill, 10 mi round trip	0	CY	$1.66	$5.10	$0.00	$6.76	$0.00
Excavation of ROC at pit	37	CY	$0.34	$1.66	$0.00	$2.00	$74.07
Loading of ROC at pit	37	CY	$0.39	$1.91	$0.00	$2.30	$85.19
Hauling ROC, 10 mi round trip	37	CY	$1.66	$5.10	$0.00	$6.76	$250.37
Prepare and roll subbase, small area	222	SY	$0.43	$0.63	$0.00	$1.06	$235.56
Spread/Compact ROC, 6" lifts	222	SY	$0.31	$0.59	$0.00	$0.90	$200.00
Geotechnical	1	EA	$67.67	$0.00	$86.98	$154.65	$154.65
SUBTOTAL							$999.84
Area Cost Factor						*69%*	$690
SUBTOTAL (Local and Means)							$931
Subcontractor Overhead						*5%*	$46.53
SUBTOTAL							$977.16
Subcontractor Profit						*10%*	$97.72
SUBTOTAL							$1,074.87

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	1	EA	$0.00	$0.00	$0.00	$26.68	$26.68
Geotextile	222	SY	$0.00	$0.00	$0.00	$1.50	$333.33
SUBTOTAL							$360.02
SUBTOTAL (Local, Means and Sub)							$1,434.89
Contractor Overhead						*5%*	$71.74
SUBTOTAL							$1,506.63
Contractor Profit						*10%*	$150.66
TOTAL UNIT COST/100 LF							$1,657.30

Source of Cost Data:
Soil material quotes from local borrow source.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
PERIMETER FENCE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Assuming completion time of 3 weeks. Remove existing fence around Lagoons 1 & 2; Construct fence around outside perimeter of Lagoons; Install fence post every 10' with concrete pads placed to a depth of 4' and having a 1' diameter.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Remove existing	1	2000 LF	-	-	-	$40,000.00	$56,000.00
7' Galvanized Chain-Link Fence	2300	LF	$1.31	$0.00	$26.17	$27.48	$63,204.00
SUBTOTAL							$119,204.00

Contractor Overhead	*5%*	$5,960.20
SUBTOTAL		$125,164.20
Contractor Profit	*10%*	$12,516.42
TOTAL UNIT COST		$137,680.62

Source of Cost Data:

Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

COMMON COST
Capital Cost Sub-Element
BACKFILL LAGOON 2

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
In-place density at 1 Test/acre/6" lift over 10 ft corresponds to 20 lifts for roughly 2 acres.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill to Elev. 508'	30,976	TON	$0.00	$0.00	$3.00	$3.00	$92,928.00
Gravel to Elev. 510' (1.5" crushed)	7,744	TON	$0.00	$0.00	$5.50	$5.50	$42,592.00
							$135,520.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Excavation of Fill at pit	25,813	CY	$0.34	$1.66	$0.00	$2.00	$51,626.67
Loading of Fill at pit	25,813	CY	$0.39	$1.91	$0.00	$2.30	$59,370.67
Hauling Fill, 10 mi round trip	25,813	CY	$1.66	$5.10	$0.00	$6.76	$174,498.13
Spreading in 8" layers, small dozer	25,813	CY	$0.30	$0.76	$0.00	$1.06	$27,362.13
Compaction Fill, 6" to 12" lifts, vibrating roller	25,813	CY	$0.40	$1.15	$0.00	$1.55	$40,010.67

SUBTOTAL		$352,868.27
Area Cost Factor	*69%*	$243,479
SUBTOTAL (Local and Means)		$378,999
Subcontractor Overhead	*5%*	$18,949.96
SUBTOTAL		$397,949.06
Subcontractor Profit	*10%*	$39,794.91
SUBTOTAL		$437,743.97

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
In-Place Density (Means)	40	EA	$0.00	$0.00	$0.00	$26.68	$1,067.29

SUBTOTAL (Local, Means and Sub)		$438,811.26
Contractor Overhead	*5%*	$21,940.56
SUBTOTAL		$460,751.82
Contractor Profit	*10%*	$46,075.18
TOTAL UNIT COST		$506,827.00

Source of Cost Data:
Local costs obtained from borrow source on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PAD - HEAVY EQUIPMENT (PER EACH) COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, VI
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 25 x 65; thickness of 8 inches.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Construction:							
Concrete pad - 8"	40	CY	$78.00	$0.98	$116.00	$194.98	$7,823.27
Gravel base - 6"	30	CY	$1.52	$1.62	$18.43	$21.57	$649.10
Curb	180	LF	$0.68	$0.00	$1.06	$1.74	$313.20
Sump hole construction, incl ex & gravel, pit	75	CF	$0.46	$0.16	$0.56	$1.18	$88.50
With 12" gravel collar, 12" pipe, corrugated, 16ga	180	LF	$8.25	$2.90	$11.90	$23.05	$4,149.00
SUBTOTAL							$13,023.07
Area Cost Factor						*69%*	$8,986
SUBTOTAL							$22,009
Subcontractor Overhead						*5%*	$1,100.45
SUBTOTAL							$23,109.44
Subcontractor Profit						*10%*	$2,310.94
SUBTOTAL							$25,420.38
Contractor Overhead						*5%*	$1,271.02
SUBTOTAL							$26,691.40
Contractor Profit						*10%*	$2,669.14
TOTAL UNIT COST							$29,360.54
Operation:							
4" Dia Contractor's Trash Pump, 300 GPM	1	DAY	$10.41	$0.00	$59.19	$69.60	$69.60
Area Cost Factor						*69%*	$48
SUBTOTAL							$118
Subcontractor Overhead						*5%*	$5.88
SUBTOTAL							$123.51
Subcontractor Profit						*10%*	$12.35
SUBTOTAL							$135.86
Contractor Overhead						*5%*	$6.79
SUBTOTAL							$142.65
Contractor Profit						*10%*	$14.26
TOTAL UNIT COST							$156.91

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DECONTAMINATION PADS - PERSONNEL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Pad size 6 x 6; thickness of 4 inches

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Concrete - 4"	0.44	CY	$78.00	$0.98	$116.00	$194.98	$86.66
Gravel base - 4"	0.44	CY	$1.52	$1.62	$18.43	$21.57	$9.59
Curb	24	LF	$0.68	$0.00	$1.06	$1.74	$41.76
SUBTOTAL							$138.00
Area Cost Factor						*69%*	$95
SUBTOTAL							$233
Subcontractor Overhead						*5%*	$11.66
SUBTOTAL							$244.89
Subcontractor Profit						*10%*	$24.49
SUBTOTAL							$269.38
Contractor Overhead						*5%*	$13.47
SUBTOTAL							$282.85
Contractor Profit						*10%*	$28.28
TOTAL UNIT COST							$311.13

Source of Cost Data:
Building Construction Cost Data, RSMeans, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATER STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
One 300 GPM pump operating for 24hrs/day. Pumping assumed to take 1 week to complete.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
4" Dia Contractor's Trash Pump, 300 GPM	7	DAY	$10.41	$0.00	$59.19	$69.60	$487.20
Trash pump rental	0.38	MO	$0.00	$825.00	$0.00	$825.00	$309.38
Hose, water, suction w/coupling, 20'L, 4" dia	0.38	MO	$0.00	$180.00	$0.00	$180.00	$67.50
Discharge hose w/coupling, 50'L, 4" dia	0.38	MO	$0.00	$120.00	$0.00	$120.00	$45.00
Laborers	7	DAY	$500.00	$0.00	$0.00	$500.00	$3,500.00
SUBTOTAL							$4,409.08
Area Cost Factor						*69%*	$3,042
SUBTOTAL							$7,451
Subcontractor Overhead						*5%*	$372.57
SUBTOTAL							$7,824
Subcontractor Profit						*10%*	$782
SUBTOTAL							$8,606.29
Contractor Overhead						*5%*	$430.31
SUBTOTAL							$9,036.61
Contractor Profit						*10%*	$903.66
TOTAL UNIT COST/ROUND							$9,940

Source of Cost Data:
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Cost
Capital Cost Sub-Element
COLL. & TREAT. OF STANDING WATER IN LAGOONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Treat standing water in Lagoons 1, 2, 4 and 5 for construction activities; costs developed based on the following: 2,000 lbs carbon/100,000 gals; 20,000 gal/Frac tank storage 8 carbon vessels (2 vessels/Carbon unit); each vessels holds 1,000 lbs of carbon and treats 50 gal/min of flow. Treatment volume: 2,841,000 gals; pumping rate of 300 gal/min operating for 24 hrs. Time to complete = 1.5 wks. Discharge treated water to 2 onsite infiltration galleries (20'x5'x5') lined with geotextile and backfilled with riprap. Estimate assumes no groundwater recharge and only one dewatering event for duration of project.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks	0.25	MO	$0.00	$0.00	$30,000.00	$30,000.00	$7,500.00
Rental of Carbon Equipment & Operation (8 Units)	1.00	WK	$0.00	$0.00	$12,000.00	$12,000.00	$12,000.00
Dewatering Equipment	0.25	MO	-	-	-	$1,000.00	$250.00
Material Cost - Carbon	30000	LB	$0.00	$0.00	$0.65	$0.65	$19,500.00
Delivery	1	LS	-	-	-	$10,000.00	$10,000.00
Disposal of Carbon	30000	LB	$0.00	$0.00	$1.00	$1.00	$30,000.00
Geotextile	22	SY	-	-	-	$1.50	$33.33
							$79,283.33
DESCRIPTION (Means)							
Analytical Testing	12	EA	$0.00	$0.00	$1,545.00	$1,545.00	$18,540.00
Rock Cover, Riprap, Light (10 to 100 lb)	37	CY	$3.00	$2.38	$15.06	$20.44	$757.04
							$19,297.04
Area Cost Factor						*69%*	$13,315
SUBTOTAL (Local & Means)							$92,598.29
Subcontractor Overhead						*5%*	$4,629.91
SUBTOTAL							$97,228
Subcontractor Profit						*10%*	$9,723
SUBTOTAL							$106,951.02
Contractor Overhead						*5%*	$5,347.55
SUBTOTAL							$112,298.57
Contractor Profit						*10%*	$11,229.86
TOTAL UNIT COST/WK							$123,528

Source of Cost Data:

Local costs from an ongoing project; Geotextile estimate from local vendor.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
EXCAVATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Excavate contaminated material and transport to dewatering/staging area.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
32 Ft Dump Truck, 6 mil liner, disposable	690	EA	$0.00	$0.00	$28.50	$28.50	$19,665.00
Truck bed covers	6,900	SY	$0.16	$0.00	$1.53	$1.69	$11,661.00
Stripping topsoil & stockpiling, sandy loam 400 HP dozer, adverse conditions	10,648	CY	$0.16	$0.70	$0.00	$0.86	$9,157.28
Excavation - Level B	18,216	CY	$0.48	$2.66	$0.00	$3.14	$57,177.83
Excavation	36,488	CY	$0.34	$1.66	$0.00	$2.00	$72,975.25
Hauling to dewatering pads or consolidation area	54,704	CY	$0.63	$1.55	$2.18	$4.36	$238,509.83
Spread on dewatering pads	10,440	CY	$0.34	$1.66	$0.00	$2.00	$20,880.00
SUBTOTAL							$430,026.19
Area Cost Factor						*69%*	$296,718
Subcontractor Overhead						*5%*	$14,835.90
SUBTOTAL							$311,554
Subcontractor Profit						*10%*	$31,155.40
SUBTOTAL							$342,709
Contractor Overhead						*5%*	$17,135.47
SUBTOTAL							$359,845
Contractor Profit						*10%*	$35,984
							$395,829.33

Source of Cost Data:
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level B for excavation of contam. material; 42% Labor & 60% Equipment
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
ODOR SUPPRESSANT

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Application of foam odor suppressant during excavation of contaminated material.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL	
Equipment Rental	5.75	MO	-	$2,000.00	-	$2,000.00	$11,500.00	Level B
Labor	2	WK	$2,600.00	-	-	$2,600.00	$5,200.00	Level B
Material cost	1	1800 LBS	-	-	$1,478.00	$1,478.00	$1,478.00	
SUBTOTAL							$18,178.00	
Area Cost Factor								
SUBTOTAL								
Contractor Overhead						*5%*	$908.90	
SUBTOTAL							$19,086.90	
Contractor Profit						*10%*	$1,908.69	
TOTAL UNIT COST							$20,995.59	

Source of Cost Data:
Equipment and material costs from an ongoing project.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor		0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
DEWATERING STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Construction costs for a dewatering structure, 30' x 40', to store saturated contaminated material before treatment.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Perimeter Berm (12" height min) Construction Material - Fill	53.9	TON	$0.00	$0.00	$3.00	$3.00	$161.78

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Fine grading of subsurface to slope to low point	133	SY	$0.39	$0.50	$0.00	$0.89	$118.67
Concrete Ramp(s)	2	EA	$203.93	$0.00	$318.26	$522.19	$1,044.38
Perimeter Berm (12" height min) Construction Spread/Compact, 6" lifts	373	SY	$0.31	$0.59	$0.00	$0.90	$336.00
SUBTOTAL							$1,499.05
Area Cost Factor						*69%*	$1,034
SUBTOTAL (Means and Local)							$1,196
Subcontractor Overhead						*5%*	$59.81
SUBTOTAL							$1,256
Subcontractor Profit						*10%*	$126
SUBTOTAL							$1,381.52

DESCRIPTION (Subcontractor)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Geomembrane Liner (40mil thickness min)	1200	SF	$0.00	$0.00	$0.00	$1.00	$1,200.00
Geotextile, nonwoven, 12oz	133	SY	$0.00	$0.00	$0.00	$1.50	$200.00
							$1,400
SUBTOTAL (Local, Means and Sub)							$2,781.52
Contractor Overhead						*5%*	$139.08
SUBTOTAL							$2,920.59
Contractor Profit						*10%*	$292.06
TOTAL UNIT COST							$3,213

Source of Cost Data:

Construction Cost Data, RS Means, 58th Edition, 2000.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Installed costs from local subcontractor.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Work completed under Level D conditions
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common Costs
Capital Cost Sub-Element
LEVEL B EQUIP & MATERIALS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibilty Study
Base Year: 2001
Date: Apr-01

Work Statement:

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Capital Costs (Per Person):							
SCBA - Rescue, 30min, 2216psi	1	EA	$0.00	$0.00	$1,819.65	$1,819.65	$1,819.65
Cascade Airline Kit, Four cylinder	1	EA	$0.00	$0.00	$662.50	$662.50	$662.50
Low Pressure Warning Alarm	1	EA	$0.00	$0.00	$220.00	$220.00	$220.00
MSA Constant Flow Airline Respirators - Full	1	EA	$0.00	$0.00	$446.65	$446.65	$446.65
Neoprene Hose, 50'L	4	EA	$0.00	$0.00	$257.05	$257.05	$1,028.20
MSA Kwik-Draw Pump	1	EA	$0.00	$0.00	$325.00	$325.00	$325.00
Galvanized Gas Cylinder Safety Cabinet	0.2	EA	$0.00	$0.00	$621.00	$621.00	$124.20
Gas Cylinder Tags, Labels & Signs	0.2	PKG	$0.00	$0.00	$10.75	$10.75	$2.15
SUBTOTAL							$4,628.35
Subcontractor Profit						*10%*	$463
SUBTOTAL							$5,091
Prime Contractor Profit						*10%*	$509
TOTAL UNIT COST							$5,600
Monthly Costs:							
Nitrile gloves	4	BOX	$0.00	$0.00	$18.80	$18.80	$75.20
Nitrile gloves dispenser pack - outer	4	BOX	$0.00	$0.00	$159.65	$159.65	$638.60
Tyvek 1A-25029	200	EA	$0.00	$0.00	$6.65	$6.65	$1,330.00
Latex Overboots	200	PAIR	$0.00	$0.00	$3.45	$3.45	$690.00
Duct Tape	50	ROLL	$0.00	$0.00	$11.45	$11.45	$572.50
Caution Tape	20	ROLL	$0.00	$0.00	$5.00	$5.00	$100.00
Walkie Talkies - Rent	6	MO	$0.00	$0.00	$120.00	$120.00	$720.00
Industrial Scientific MG140 gas meter	3	MO	$0.00	$0.00	$400.00	$400.00	$1,200.00
103L Cylinder of CO, H2S, O2, Pentane Cal gas	0.5	CYL	$0.00	$0.00	$300.00	$300.00	$150.00
Flame-ionization detector - Rent	3	MO	$0.00	$0.00	$640.00	$640.00	$1,920.00
Respirator Wipe Pads	10	PKG	$0.00	$0.00	$15.10	$15.10	$151.00
MSA Detector Tubes - H_2S	25	PKG	$0.00	$0.00	$53.40	$53.40	$1,335.00
Compressed air 2.2 UN1002-T 311 CF	30	CYL	$0.00	$0.00	$30.00	$30.00	$900.00
316 T UHP Hydrogen Gas	10	CYL	$0.00	$0.00	$125.00	$125.00	$1,250.00
SUBTOTAL							$11,032.30
Subcontractor Profit						*10%*	$1,103
SUBTOTAL							$12,136
Prime Contractor Profit						*10%*	$1,214
TOTAL UNIT COST							$13,349

CYL = cylinder
Source of Cost Data:
Local vendors.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Not Applicable
Escalation to Base Year		Base year costs
Area Cost Factor		Not applicable
Subcontractor Profit.	X	Assuming markup of 10% for Profit.
Prime Contractor Profit.	X	Assuming markup of 10% for Profit.

Alternative 7
Capital Cost Sub-Element
BACKFILL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Backfill excavated contaminated soil with clean fill;
Backfill 75% of Lagoon 1 to Elev. 510' = 3.3 acres x 5 ft.
Assumed for costing that all of the excavated material, including cover soils, is placed under cap.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Backfill Excavated Material with Common Fill	65,552	CY	$0.86	$1.98	$5.06	$7.90	$517,858.75
SUBTOTAL							$517,858.75
Area Cost Factor						69%	$357,323
Subcontractor Overhead						5%	$17,866.13
SUBTOTAL							$375,189
Subcontractor Profit						10%	$37,518.87
SUBTOTAL							$412,708
Contractor Overhead						5%	$20,635.38
SUBTOTAL							$433,343
Contractor Profit						10%	$43,334.29
TOTAL UNIT COST							$476,677.20

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
SOLIDIFICATION

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasiblity Study
Base Year: 2001
Date: Apr-01

Work Statement:

Solidify/stabilize excavated material. Contractor assumed to provide their own conveyors, screens and silos and also to provide their own decon and maintenance.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Reagents	54,704	TON	-	-	-	$7.00	$382,928.62
Handling to processor	54,704	TON	-	-	-	$1.25	$68,380.11
Soil treatment	54,704	TON	-	-	-	$12.00	$656,449.07
Soil placement/compaction	54,704	TON	-	-	-	$4.50	$246,168.40
SUBTOTAL							$1,353,926.20
Prime Contractor Overhead						*5%*	$67,696
SUBTOTAL							$1,421,622.51
Prime Contractor Profit						*10%*	$142,162.25
SUBTOTAL							$1,563,784.76

Source of Cost Data:

Engineering judgement and experience including project bids received from potential subcontractors, Spring/2001.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Included in price
Escalation to Base Year		Base year costs
Area Cost Factor		Not applied, special application
Subcontractor Overhead & Prof.		Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
COLLECTION & TREATMENT OF LEACHATE

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimated time to complete excavation of contaminated material is assumed to be 23 wks including time to dewater Lagoon 4 during cap installation. Analytical monitoring for compliance 40 CFR 261 before direct discharge into onsite infiltration galleries. Hay bales and pile cover installation completed under Level B protection.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rental of Fragmentation Tanks (2 Units)	7.5	MO	$0.00	$0.00	$3,000.00	$3,000.00	$22,500.00
Rental of Carbon Equipment & Operation	30	WK	$0.00	$0.00	$1,500.00	$1,500.00	$45,000.00
Material Cost - Carbon	10000	LB	$0.00	$0.00	$0.65	$0.65	$6,500.00
Decontamination of Frac. Tanks	2	EA	$0.00	$0.00	$1,000.00	$1,000.00	$2,000.00
Disposal of Carbon	10000	LB	$0.00	$0.00	$1.00	$1.00	$10,000.00
							$86,000.00

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	TOTAL	TOTAL
Analytical Testing	10	EA	$0.00	$0.00	$1,545.00	$1,545.00	$15,450.00
Hay Bales, Staked	4800	LF	$0.21	$0.07	$2.00	$2.28	$10,944.00
Waste Pile Cover, 135lb Tear	1452	SY	$0.16	$0.00	$1.53	$1.69	$2,453.29
SUBTOTAL - Means							$28,847.29
Area Cost Factor						*69%*	$19,905
SUBTOTAL (Local and Means)							$105,905
Subcontractor Overhead						*5%*	$5,295.23
SUBTOTAL							$111,200
Subcontractor Profit						*10%*	$11,119.99
SUBTOTAL							$122,319.85
Contractor Overhead						*5%*	$6,116
SUBTOTAL							$128,436
Contractor Profit						*10%*	$12,843.58
TOTAL UNIT COST							$141,279.43

Source of Cost Data:

Local costs from an ongoing project.
Construction Cost Data, RS Means, 58th Edition, 2000; Local cost estimate from an ongoing project.
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
GEOSYNTHETICS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Cap consists of a layer of geotextile under a 1.5' thick layer of common fill and a 6" layer of topsoil.

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	25,168	SY	-	-	-	$1.50	$37,751.62
SUBTOTAL - Local							$37,751.62
Prime Contractor Overhead						5%	$1,888
SUBTOTAL							$39,639
Prime Contractor Profit						10%	$3,964
TOTAL UNIT COST							$43,603

Source of Cost Data:
Cost estimate from local vendor on 3/20/01.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
COMMON FILL COVER

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Thickness of fill cover taken as 1.5' over an approximate area of 4 acres increased by 30% to account for side slopes. Sand ton = 4 acres s.f. x 30% increase x 1.5 tons = approx. 18,900 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Fill	18,876	TON	$0.00	$0.00	$1.00	$1.00	$18,876.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Fill at pit	12,584	CY	$0.34	$1.66	$0.00	$2.00	$25,168.00
Loading of Fill at pit	12,584	CY	$0.39	$1.91	$0.00	$2.30	$28,943.20
Hauling Fill, 10 mi round trip	12,584	CY	$1.66	$5.10	$0.00	$6.76	$85,067.84
Spreading in 8" layers, small dozer	12,584	CY	$0.30	$0.76	$0.00	$1.06	$13,339.04
Compaction Fill, 6" to 12" lifts, vibrating roller	12,584	CY	$0.40	$1.15	$0.00	$1.55	$19,505.20
SUBTOTAL							$172,023.28
Area Cost Factor						69%	$118,696
SUBTOTAL (Local and Means)							$137,572
Subcontractor Overhead						5%	$6,878.60
SUBTOTAL							$144,451
Subcontractor Profit						10%	$14,445.07
SUBTOTAL							$158,895.73
DESCRIPTION (Means - Sub O&P included)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
In-Place Density	8	EA	$0.00	$0.00	$0.00	$38.67	$309.36
Area Cost Factor						69%	$213.46
SUBTOTAL (Local and Means)							$159,109.19
Prime Contractor Overhead						5%	$7,955
SUBTOTAL							$167,064.65
Prime Contractor Profit						10%	$16,706.47
TOTAL UNIT PRICE							$183,771.12

Source of Cost Data:
Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
TOPSOIL

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

6" layer of topsoil over an approximate 174,240 s.f. area increased by 30% to account for side slopes. Assuming weight of topsoil = 1.5 TONS/CY x 4200 CY = approx. 6,300 tons.

Cost Analysis:

DESCRIPTION (Local)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Common Topsoil	6,292	TON	$0.00	$0.00	$11.50	$11.50	$72,358.00
DESCRIPTION (Means)	**QTY**	**UNIT**	**LABOR**	**EQUIP**	**MTRL**	**TOTAL**	**TOTAL**
Excavation of Topsoil at pit	4,195	CY	$0.34	$1.66	$0.00	$2.00	$8,389.33
Loading of Topsoil at pit	4,195	CY	$0.39	$1.91	$0.00	$2.30	$9,647.73
Hauling Topsoil, 10 mi round trip	4,195	CY	$1.66	$5.10	$0.00	$6.76	$28,355.95
Area Preparation, 67% Level, 33% Slope	4	ACRE	$22.05	$40.14	$0.00	$62.19	$248.76
Fine Grading	19,360	SY	$0.06	$0.15	$0.00	$0.21	$4,065.60
SUBTOTAL							$50,707.37
Area Cost Factor						*69%*	$34,988
SUBTOTAL (Local and Means)							$107,346
Subcontractor Overhead						*5%*	$5,367.30
SUBTOTAL							$112,713
Subcontractor Profit						*10%*	$11,271.34
SUBTOTAL							$123,985
Contractor Overhead						*5%*	$6,199.24
SUBTOTAL							$130,184
Contractor Profit						*10%*	$13,018.40
TOTAL UNIT COST							$143,202.36

Source of Cost Data:

Local costs from nearby borrow source obtained on 2/27/01.
Building Construction Cost Data, RS Means, 58th Edition, 2000
Environmental Remediation Cost Data, RS Means, 6th Edition, 2000

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)	X	Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Alternative 7
Capital Cost Sub-Element
DRAINAGE STRUCTURES

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:

Estimate of material required to build drainage structures for a landfill cap assuming drainage swale around perimeter of cap footprint, width of 10' and depth of 2', consisting of 10 to 100 lb riprap over nonwoven geotextile. An allowance for two heavy stone riprap areas of ~200 sf were assumed for construction of heavy drainage outlet structures.

Cost Analysis:

DESCRIPTION (Means)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Rock Cover, Riprap, Heavy (25 to 500 lb)	60	CY	$3.00	$2.38	$15.78	$21.16	$1,269.60
Rock Cover, Riprap, Light (10 to 100 lb)	1602	CY	$3.00	$2.38	$15.06	$20.44	$32,744.88
SUBTOTAL-Means							$34,014.48
Area Cost Factor						*69%*	$23,470
Subcontractor Overhead						*5%*	$1,173.50
SUBTOTAL							$24,643
Subcontractor Profit						*10%*	$2,464
SUBTOTAL							$27,107.84
Prime Contractor Overhead						*5%*	$1,355
SUBTOTAL							$28,463.23
Prime Contractor Profit						*10%*	$2,846.32
SUBTOTAL							$31,309.56

DESCRIPTION (Local Contractor)	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Geotextile	7212	SY	-	-	-	$1.50	$10,818.00
Prime Contractor Overhead						*5%*	$540.90
SUBTOTAL							$11,358.90
Prime Contractor Profit						*10%*	$1,135.89
SUBTOTAL							$12,494.79
TOTAL UNIT COST							$43,804

Source of Cost Data:

Environmental Remediation Cost Data, RS Means, 6th Edition, 2000
Geotextile estimate from subcontractor for installed material, includes subcontractor's markup for overhead and profit.

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		Escalation Factor of 1.00 for base year of 2001, cost information 2000
Area Cost Factor	X	0.69 localization factor for 052 zip code (Means)
Subcontractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.
Prime Contractor Overhead & Prof.	X	Assuming markup of 10% each for both Overhead and Profit.

Common costs
Capital Cost Sub-Element
LAND USE RESTRICTIONS

COST WORKSHEET

Site: Pownal Tannery Site
Location: Pownal, Vt
Phase: Feasibility Study
Base Year: 2001
Date: Apr-01

Work Statement:
Zoning/Deed restrictions

Cost Analysis:

DESCRIPTION	QTY	UNIT	LABOR	EQUIP	MTRL	UNIT TOTAL	TOTAL
Legal Preparation	120	HR	$150.00	$0.00	$0.00	$150.00	$18,000.00
Engineering Support	80	HR	$75.00	$1.62	$18.43	$95.05	$7,604.00
Filing	1	LS	$0.00	$0.00	$2,000.00	$2,000.00	$2,000.00
SUBTOTAL							$27,604.00
Contractor Overhead						*5%*	$1,380.20
SUBTOTAL							$28,984.20
Contractor Profit						*10%*	$2,898.42
TOTAL UNIT COST							$31,882.62

Source of Cost Data:
Engineering judgement